

# Debugging your JavaScript

AKA: Oh crap what  
went wrong?

# Who am I?

- Raymond Camden  
(raymondcamden.com)
- Senior Developer Evangelist @ Adobe
- @cfjedimaster
- I make bugs for a living

So, um, we have a  
problem

It isn't the bugs

9/9

0800 Antran started  
 1000 stopped - antran ✓ { 1.2700 9.032 847 025  
 1300 1034 MP-MC 2.130476415 (2) 9.032 846 995 const  
 033 PKO 2 2.130476415  
 const 2.130676315  
 Relays 6-2 in 033 failed special speed test  
 in relay 10.000 test.

1100 Started Relay, changed  
 1525 Started Cosine Tape (Sine check)  
 Started Multi Adder Test.

1545



Relay #70 Panel F  
 (moth) in relay.

1600 Antran started.  
 1700 closed down.

FIRST actual case of bug being found.

Thursday, June 28, 12

American engineers have been calling small flaws in machines "bugs" for over a century. Thomas Edison talked about bugs in electrical circuits in the 1870s. When the first computers were built during the early 1940s, people working on them found bugs in both the hardware of the machines and in the programs that ran them.

In 1947, engineers working on the Mark II computer at Harvard University found a moth stuck in one of the components. They taped the insect in their logbook and labeled it "first actual case of bug being found." The words "bug" and "debug" soon became a standard part of the language of computer programmers.

The problem is  
finding the bug



Thursday, June 28, 12

[Download](#)[Demos & Documentation](#)[Themes](#)[Development](#)[Support](#)

SAN FRANCISCO, CALIFORNIA  
JUNE 28 & 29, 2012  
[events.jquery.org](http://events.jquery.org)

#### Interactions

- [Draggable](#)
- [Droppable](#)
- [Resizable](#)
- [Selectable](#)
- [Sortable](#)

#### Widgets

- [Accordion](#)
- [Autocomplete](#)
- [Button](#)
- [Datepicker](#)
- [Dialog](#)
- [Progressbar](#)
- [Slider](#)
- [Tabs](#)

## Autocomplete

[Theme: UI lightness](#)[New window](#)

#### Examples

##### Default functionality

- [Remote datasource](#)
- [Remote with caching](#)
- [Remote JSONP datasource](#)
- [Scrollable results](#)
- [Combobox](#)
- [Custom data and display](#)
- [XML data parsed once](#)
- [Categories](#)
- [Accent folding](#)
- [Multiple values](#)
- [Multiple, remote](#)

Tags:

# What has to work...

# What has to work...

- JavaScript enabled

# What has to work...

- JavaScript enabled
- jQuery Loaded

# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded

# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded

# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete

# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete
- Have to ensure your setup options match what the control needs

# What has to work...

- JavaScript enabled
- jQuery Loaded
- jQuery UI Loaded
- jQuery UI CSS Loaded
- Have to select the right DOM for the autocomplete
- Have to ensure your setup options match what the control needs
- Have to ensure your data source (which is probably remote) is working right

# Lots of Opportunities



The First  
Bug  
is one you  
probably don't  
know you have



# Can you spot the bug?

The screenshot shows the MySpace homepage with a dark background. At the top, there's a navigation bar with links for 'Sign up', 'Login', 'Search People', 'Music', 'Video', 'Games', and 'Browse People'. Below the navigation is a large banner for a contest: 'Enter today with an existing YouTube video link, for a chance to win up to \$25,000 and open for a National Act!'. To the right of this is another banner for '2011 WAS BIG' featuring 'PLAIN WHITE T'S'. Further right is an advertisement for 'CHARTER INTERNET' with a price of '\$29.99'. On the far right, there's a vertical sidebar with 'MYSspace MUSIC PLAYER LAUNCH'.

**Contest Banner:** Enter today with an existing YouTube video link, for a chance to win up to \$25,000 and open for a National Act!

**2011 WAS BIG**  
NATIONAL ACTS INCLUDED:  
PLAIN WHITE T'S

**CHARTER INTERNET**  
SPEEDS UP TO 30 MBPS  
\$29.99  
LEARN MORE

**Sign up free**  
Already a member? [Login](#)  
OR  
Connect with Facebook

**Chris Brown & Usher**  
Who's More Likely To' with Steve Carell, Keira Knightley & the cast [WATCH ▶](#)

**NEW MYSpace PLAYLISTS** [Open Player ▶](#)

**MUSIC SONG CHARTS**

**MUSIC VIDEO CHARTS**



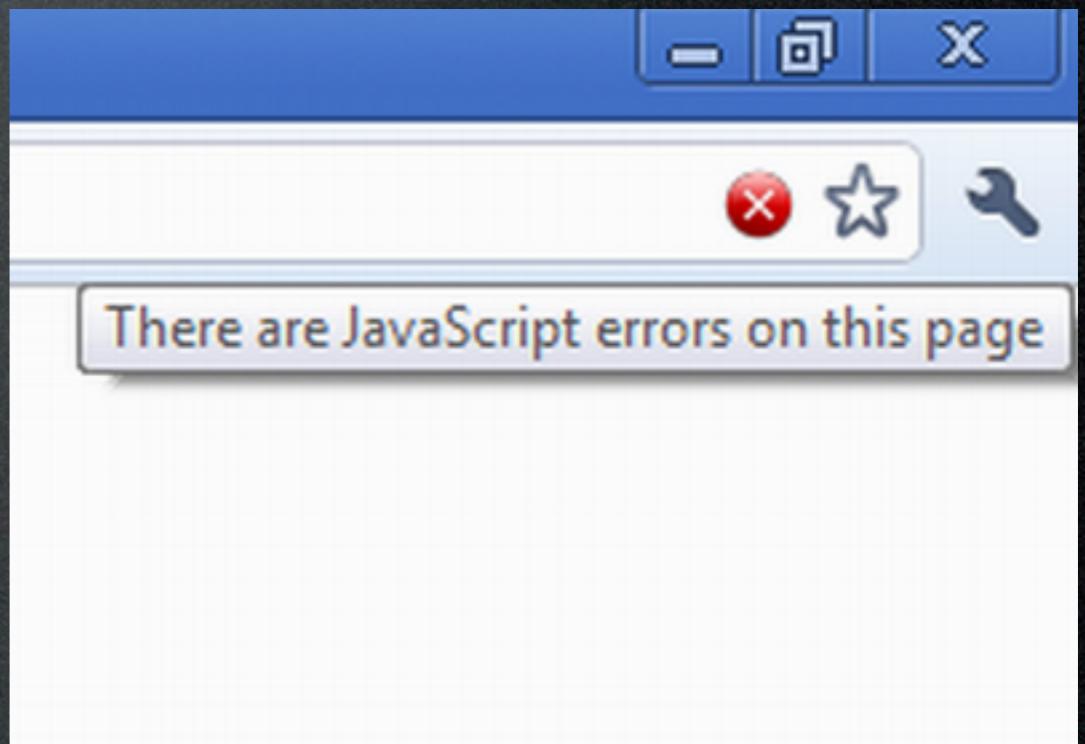
Thursday, June 28, 12

# Being Proactive

- Checking the tools we're going to cover later
- Unit Testing

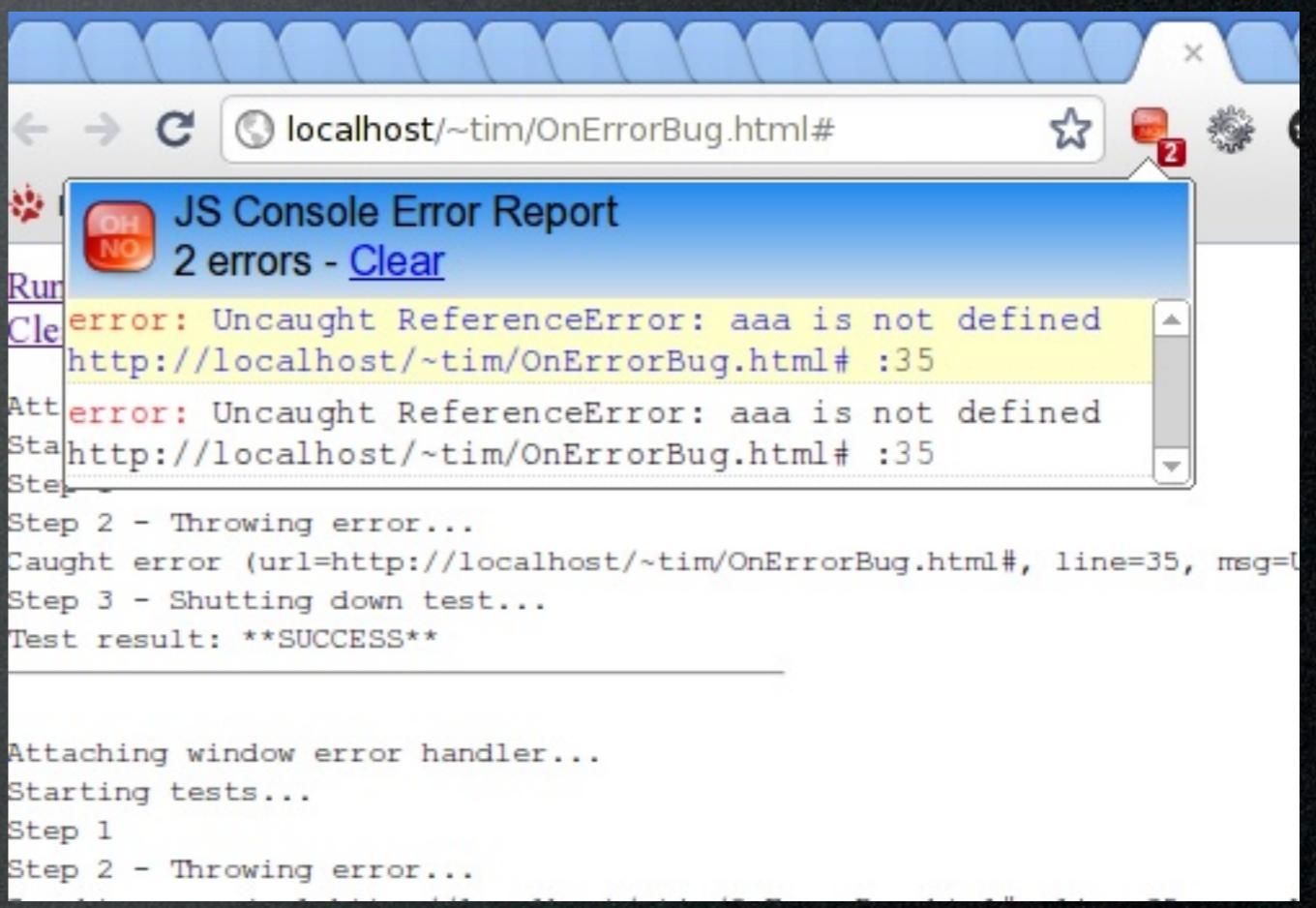
# Chrome Extensions

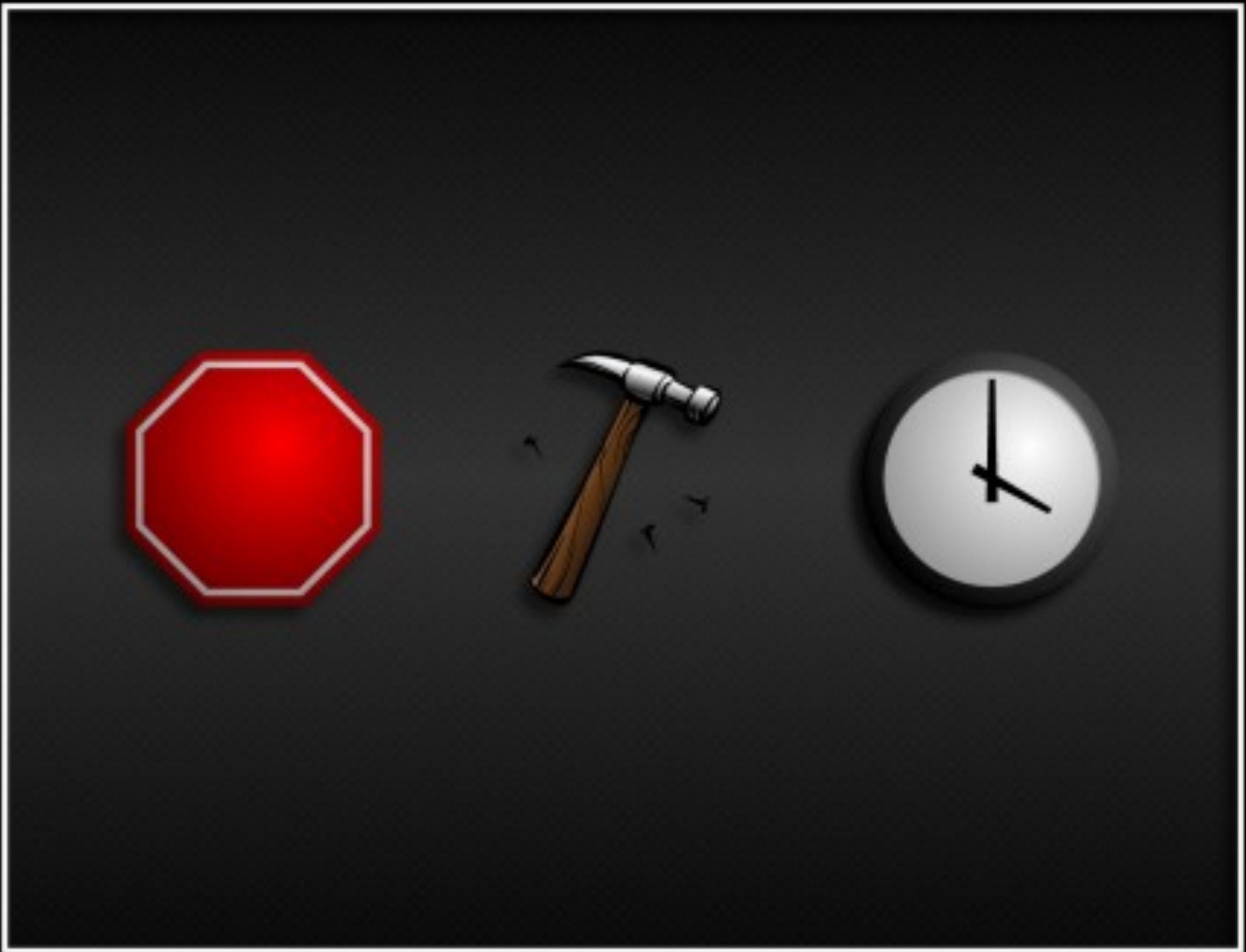
- javascript-error-notifier
- <http://code.google.com/p/javascript-error-notifier/>



# Chrome Extensions

- jsError
- <https://github.com/schmerg/JsError>





Thursday, June 28, 12

test1

# {errorception}

- <http://errorception.com/>
- 30 day trial
- \$5 plan that reports up to 500 errors
- Works via simple embed

# {errorception}

## Showing all errors

### Access is denied.

On line 18 of <https://apis.google.com/js/plusone.js> on 139 different pages.

255 occurrences this week

 Seen in 2 different versions of Internet Explorer. Last seen 3 minutes ago. Occurred 255 times so far. Occurred before page load.

### Отказано в доступе.

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

2 occurrences this week

 Seen in Internet Explorer 9. Last seen 33 minutes ago. Occurred 2 times so far. Occurred before page load.

### window.frames.print\_frame\_D1897B91BF2BEB0CBCEDA700AAF476C4 is...

1 occurrence this week

In an inline script on <http://www.raymondcamden.com/index.cfm/2011/4/5/Collapsible-content>...

 Seen in Firefox 13. Last seen 3 hours ago. Occurred once so far. Occurred after page load.

### Accès refusé.

On line 18 of <https://apis.google.com/js/plusone.js> on 11 different pages.

14 occurrences this week

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 14 times so far. Occurred before page load.

### הגישה נדחתה.

1 occurrence this week

On line 18 of <https://apis.google.com/js/plusone.js> on 1 page.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred once so far. Occurred before page load.

### Åtkomst nekad.

2 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 2 different pages.

 Seen in Internet Explorer 9. Last seen 3 hours ago. Occurred 2 times so far. Occurred before page load.

### Toegang geweigerd.

8 occurrences this week

On line 18 of <https://apis.google.com/js/plusone.js> on 6 different pages.

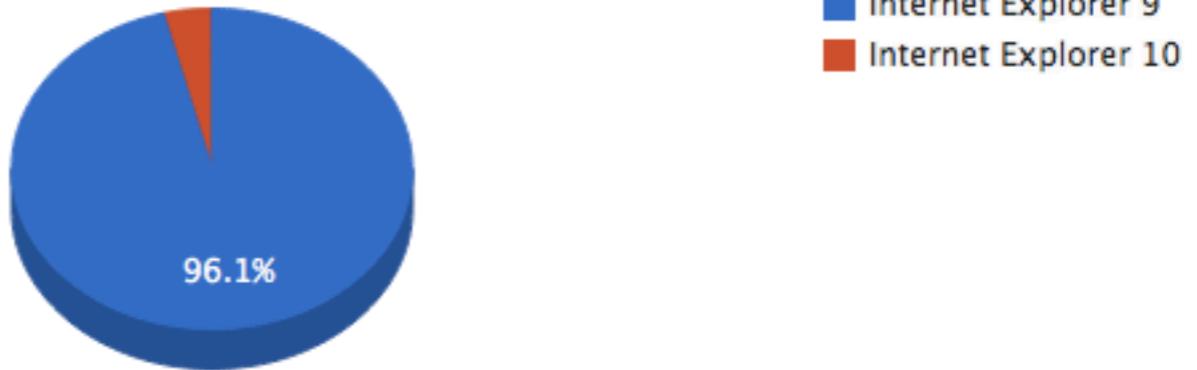
# Access is denied.

Where

[Line 18 in https://apis.google.com/js/plusone.js](#)

Note: Line numbers may not be too useful in IE. Curse it!

Browsers

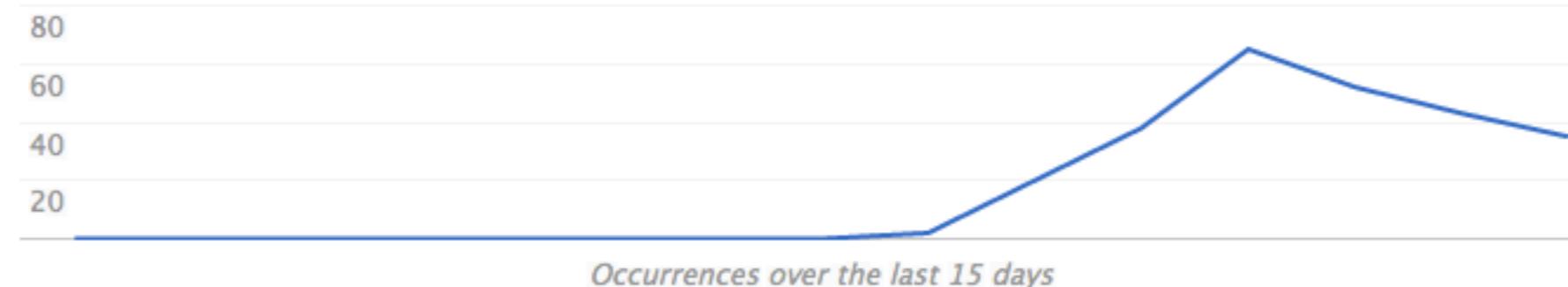


When

Before page load

Occurrences

255 total occurrences. First seen 6 days ago. Last seen 5 minutes ago.



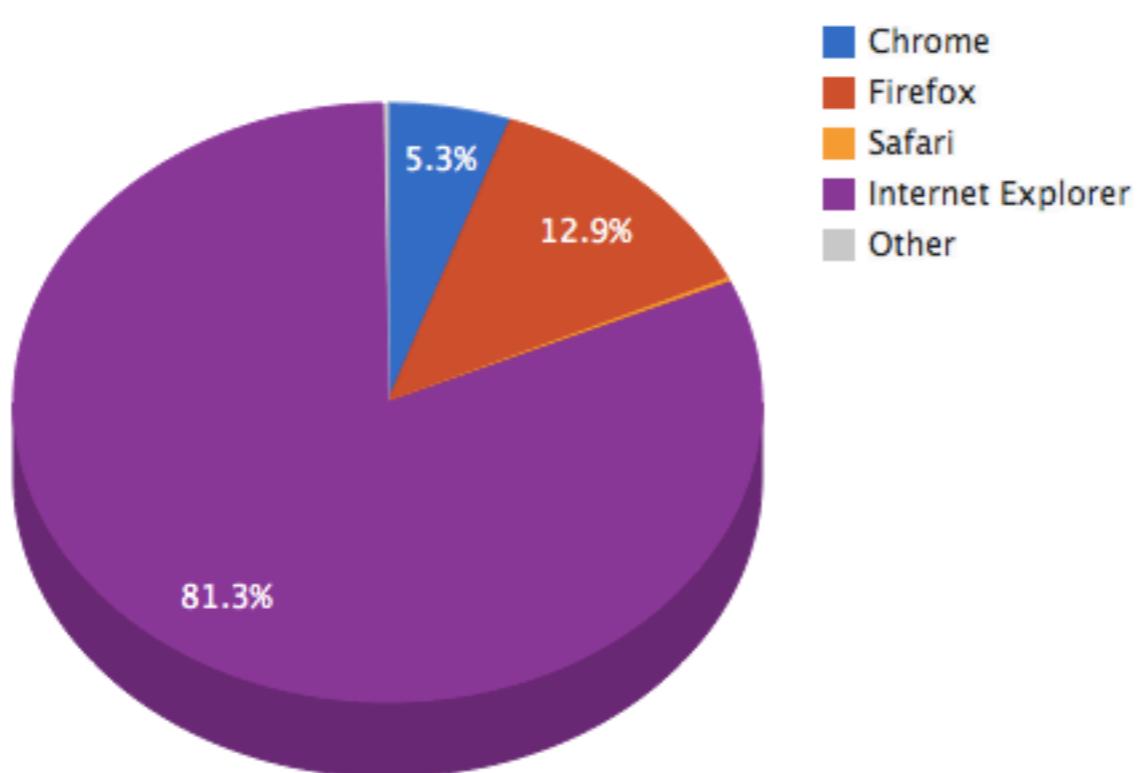
On pages

<http://www.raymondcamden.com/index.cfm/2011/4/3/Example-of-jQuery-Mobile-...>  
<http://www.raymondcamden.com/index.cfm/2011/3/9/Adding-driving-directions-t...>  
<http://www.raymondcamden.com/index.cfm/2012/1/19/Downloading-files-to-a-Ph...>  
<http://www.raymondcamden.com/index.cfm/2009/2/10/An-Introduction-to-jQuery...>  
<http://www.raymondcamden.com/index.cfm/2007/7/26/Getting-a-page-from-a-P...>  
<http://www.raymondcamden.com/index.cfm/2012/6/11/ColdFusion-Developer-Wee...>  
<http://www.raymondcamden.com/index.cfm/2009/11/17/Looking-For-Writing-Cold...>  
<http://www.raymondcamden.com/index.cfm/2009/2/9/An-introduction-to-jQuery-...>

## Graphs



## Browsers



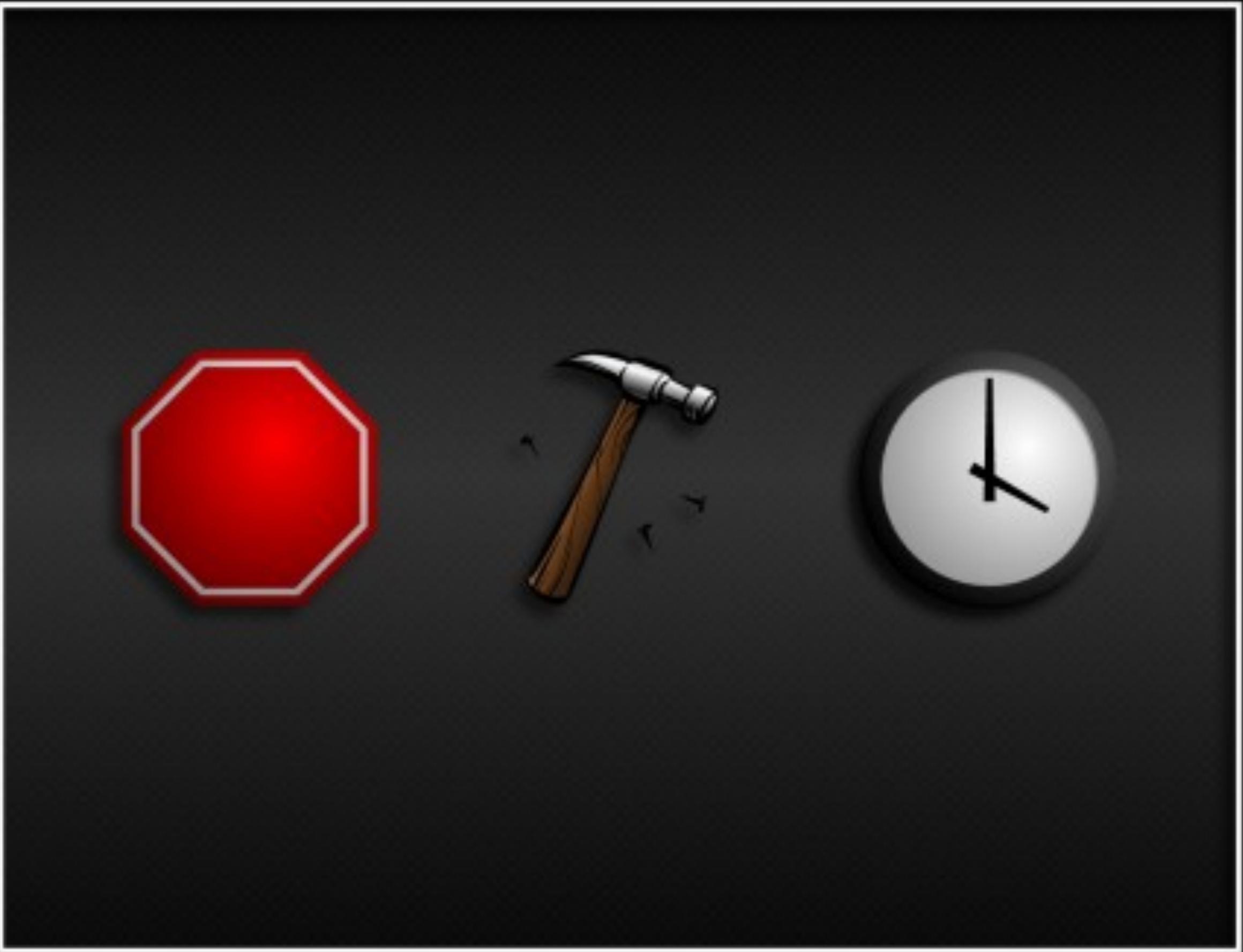
Browsers	Errors
Internet Explorer	993
Firefox	157
Chrome	65
Safari	3
Chromium	1
iPad	1
RockMelt	1
Total	1221

# You've got a bug, now what?

- Learn your browser tools
- It doesn't necessarily matter if it's not your standard browser
- And guess what - you can use more than one (really)

# Chrome Dev Tools

- Wrench -> Tools -> Developer Tools
- Keyboard combo
- Run at bottom, right, detached



Thursday, June 28, 12

# What we care about...

- Console
- Network
- Elements
- Scripts/Sources
- Resources

# Console

- Errors show up here
- You can run commands here as well as code in your page
- You can view log messages here

# console API

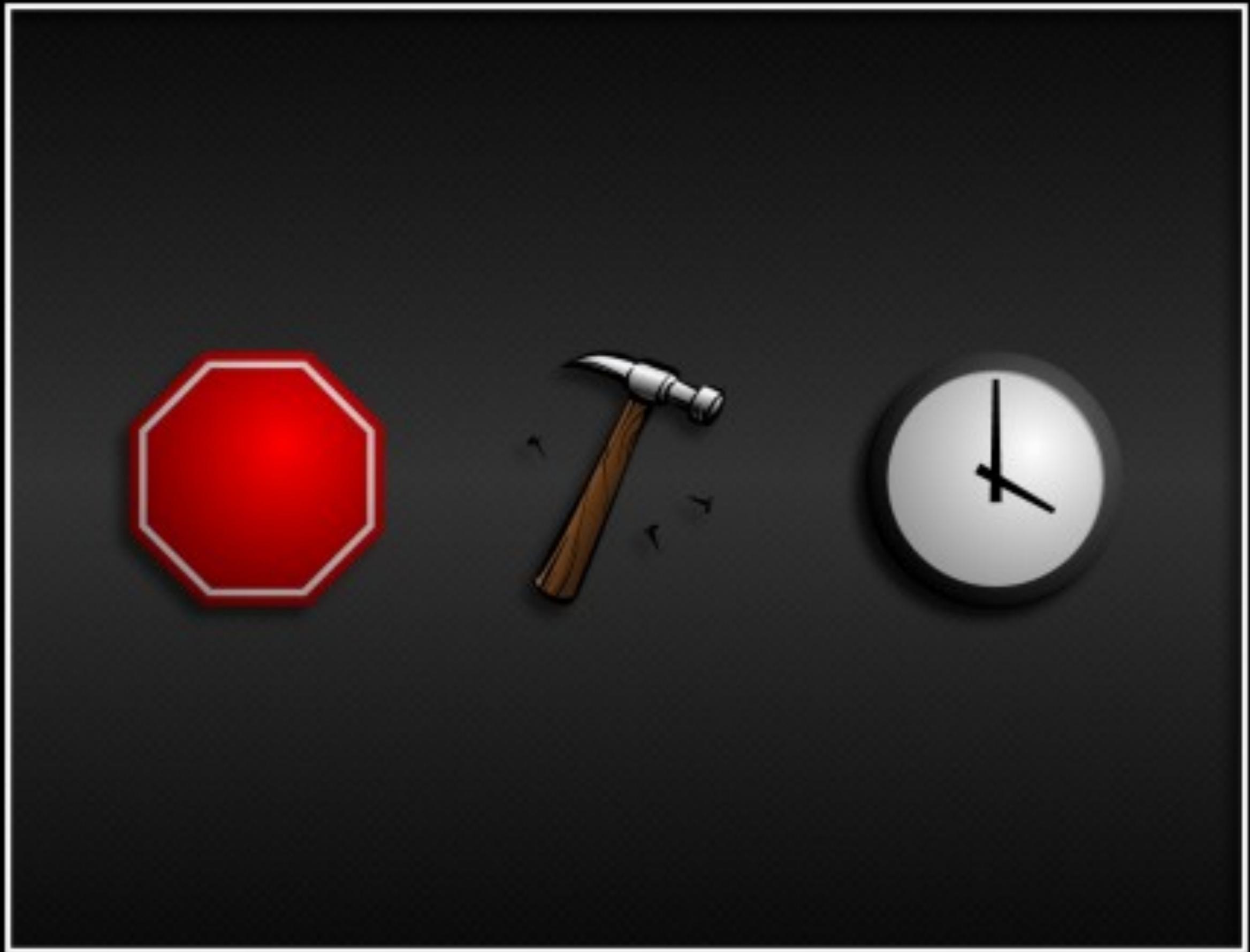
- Your code can send messages to the console
- I use the heck out of this
- No, really, I make logs like a lumberjack

# console API

- [http://getfirebug.com/wiki/index.php/  
Console\\_API](http://getfirebug.com/wiki/index.php/Console_API)
- **log**, error, warn, info, count, debug,  
profileend, trace, dir, dirxml, assert,  
time, profile, timeEnd, group,  
groupEnd

# console.log

- `console.log("this works");`
- `console.log("What is X "+x);`
- `console.log("X",x);`
- `console.log(object);`



Thursday, June 28, 12

test2

Add log to document ready.

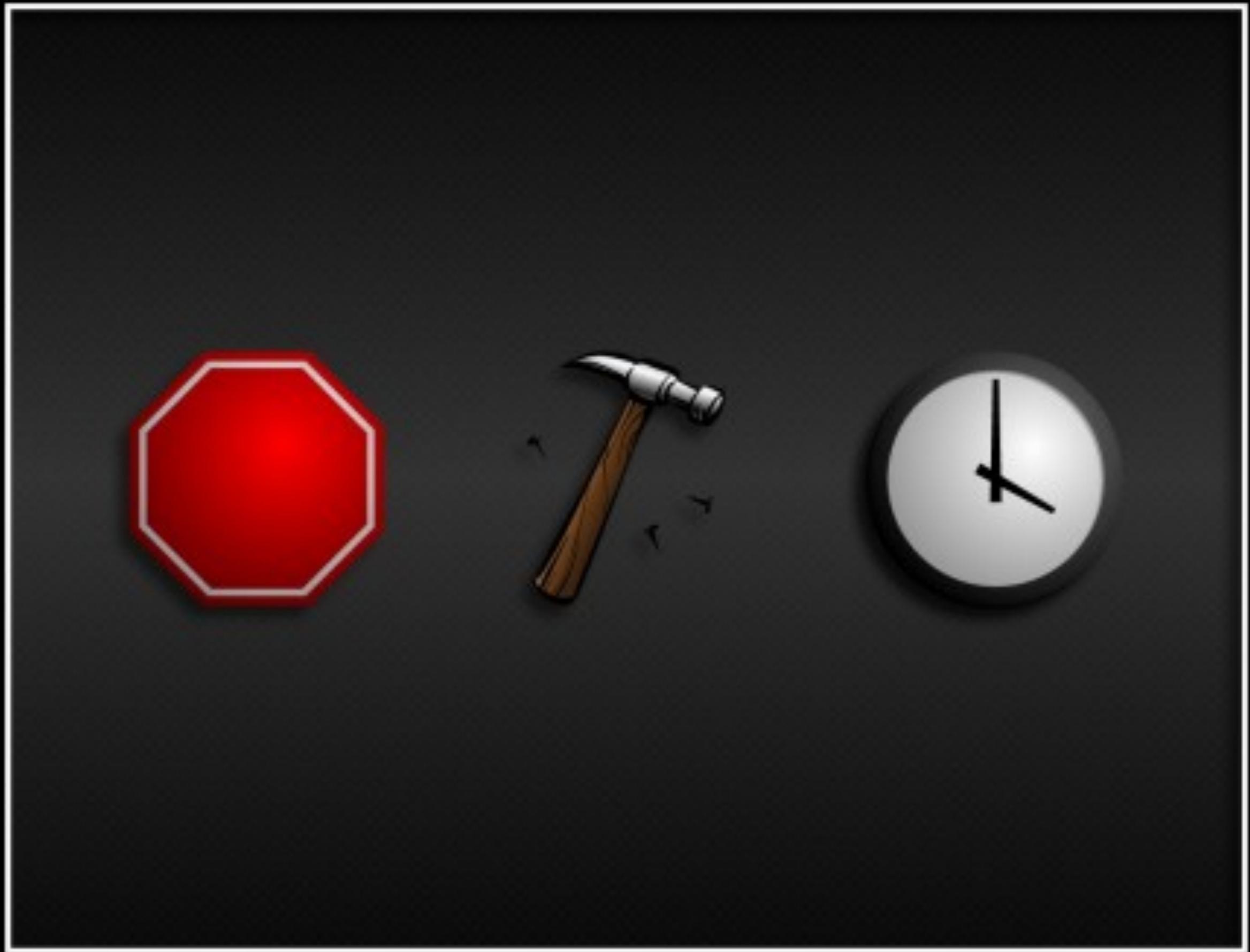
Add log for click event

Show \$("#simButton") in console returning nothing

Show Elements and hunt for it

# console.dir

- Dumps an object
- Great for introspecting remote data
- Firebug does it nicer (a bit)

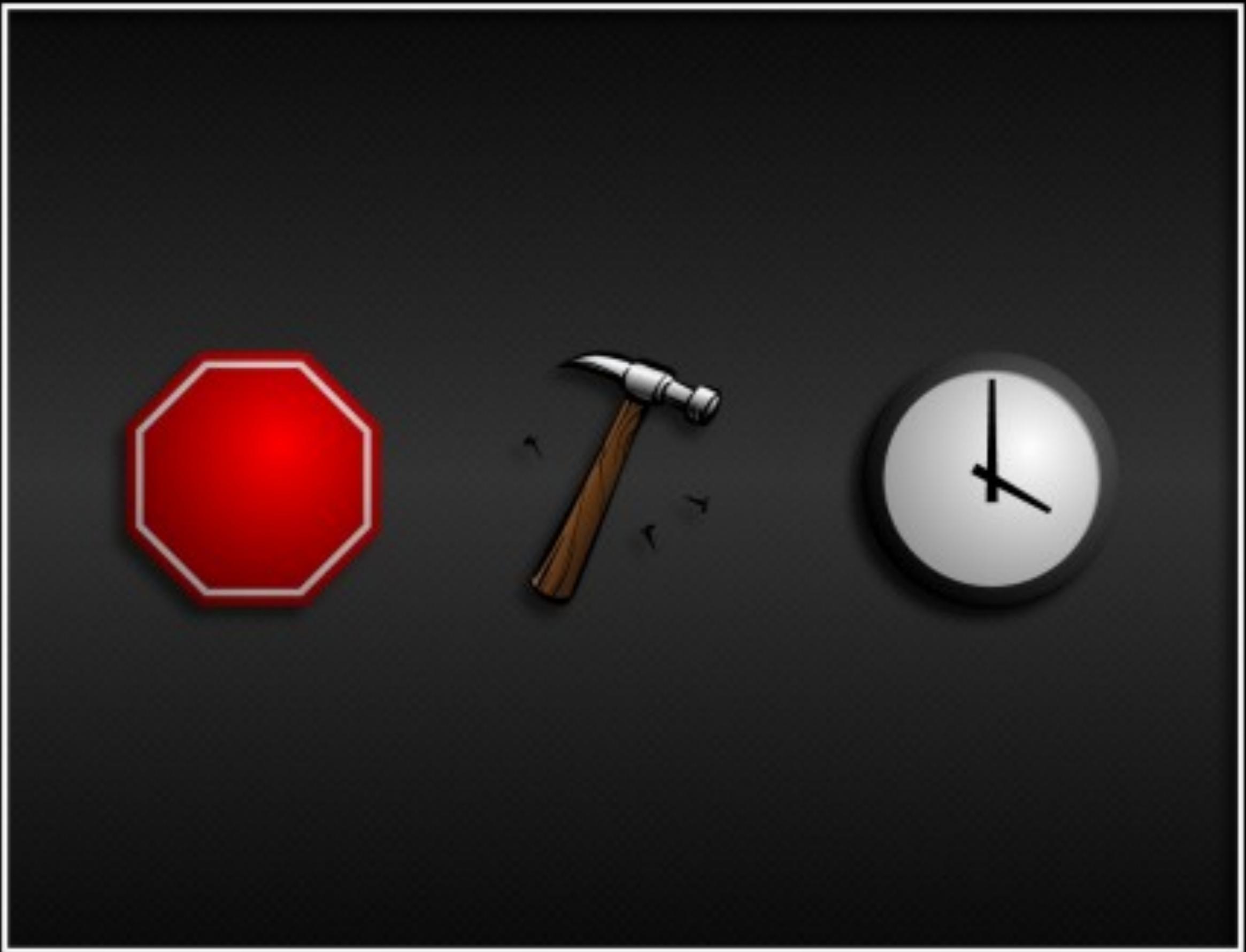


Thursday, June 28, 12

Just show in console how you can console.dir navigator,window, etc

# Network Requests

- Check the output
- Check **all** the output
- Look for things like redirects on session timeout
- JSON/P is a bit different

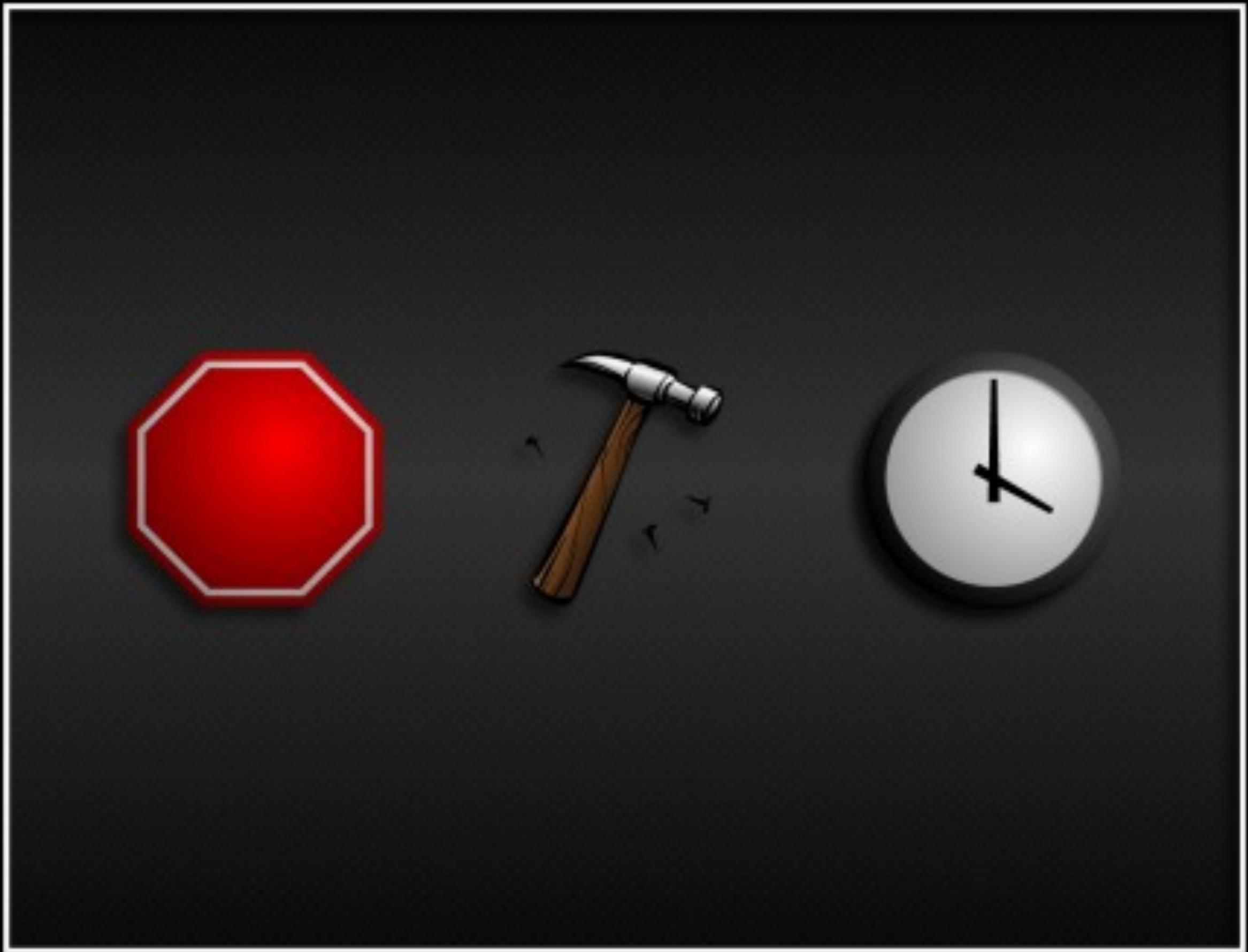


Thursday, June 28, 12

**demo3 + jsonp**

# Elements

- Handy for looking at your DOM
- Which may be dynamic (ColdFusion, Ruby, PHP, etc)
- Which may be dynamic (JavaScript)



Thursday, June 28, 12

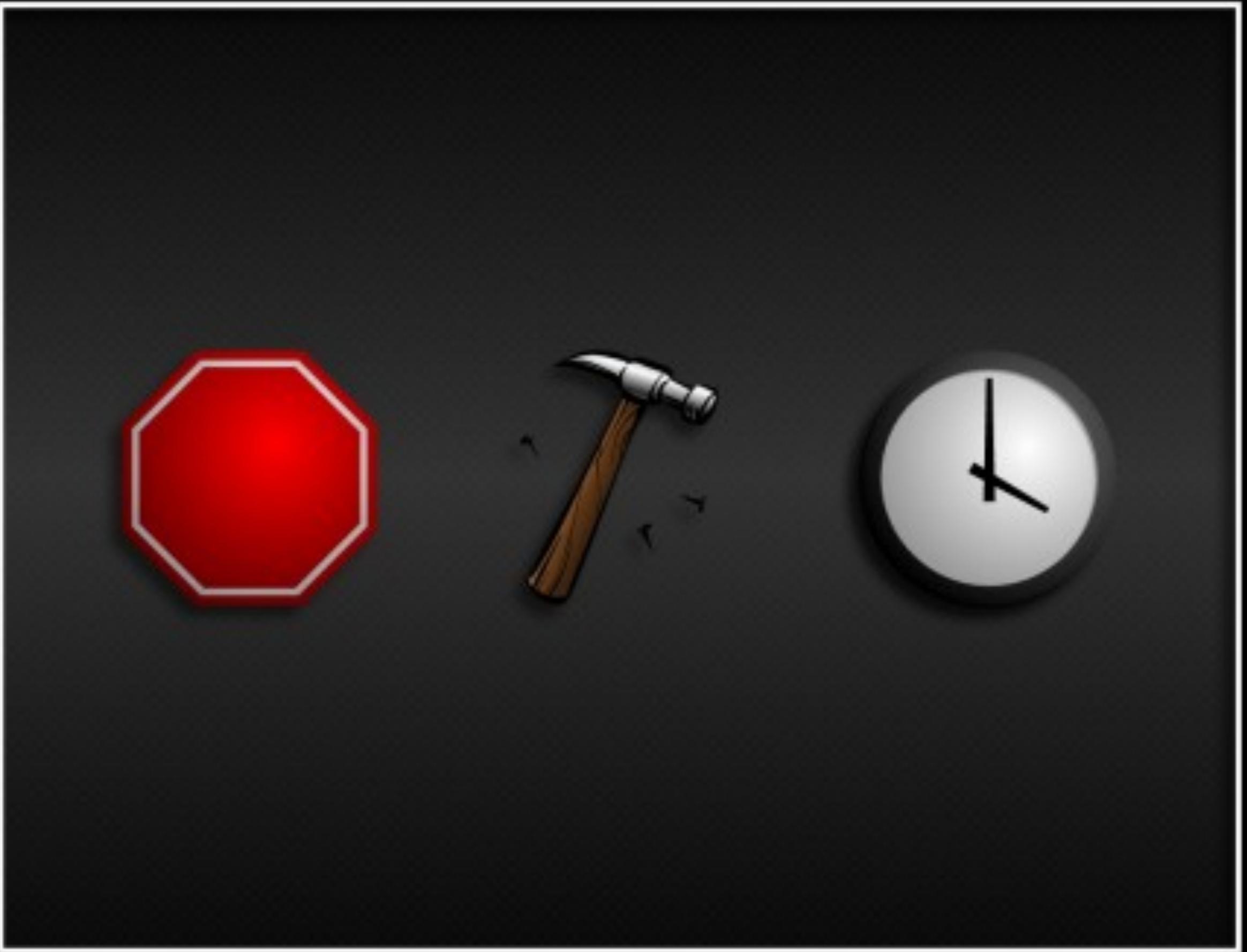
**demo4.**  
show safari and test1 failing  
test2 -> bad html

# Scripts/Sources

- List of all the scripts on your page
- This is your debugger
- (p.s. note the stop on error magic trick)

# Debugger Key Terms

- Breakpoints
  - Specific
  - Dynamic
  - DOM Change, XHR, Events
- Stepping
  - Multiple ways to progress



Thursday, June 28, 12

**demo5**

# Resources

- Cookies, Databases, IndexedDB, Local (and Session) Storage, Application Cache
- As well as HTML, JS, CSS

# The Last Resort

Thursday, June 28, 12



# OVERCONFIDENCE

This is going to end in disaster, and you have no one to blame but yourself.